

APPLICATION FOR UNITED STATES PATENT

in the name of

Jack Wassom , Renee Schaefer, and Cory Chandler

of

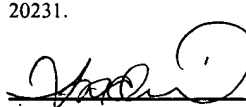


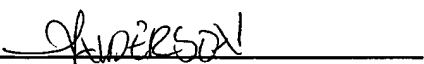
America Online, Inc.

for

CUSTOMIZED USER INTERFACE

09224211 123098

I hereby certify under 37 CFR 1.10 that this correspondence is being deposited with the United States Postal Service as **Express Mail Post Office To Addressee** with sufficient postage on the date indicated below and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.


signature

name



ATTORNEY DOCKET:

06975/033001

DATE OF DEPOSIT: December 30, 19998

EXPRESS MAIL EM028413660US

CUSTOMIZED USER INTERFACE

TECHNICAL FIELD

This invention relates to customized user interfaces, for example, a graphical user interface (GUI).

5

BACKGROUND

A GUI can include a wide variety of user interface controls that respond to user manipulation. Referring to FIG. 1, a Microsoft Word™ word processing application GUI 100 includes a toolbar 102 that presents a row of user input controls 102a-102j positioned in a substantially regular pattern. The controls enable a user 102a-102j to quickly perform common tasks such as opening
10 102b, saving 102c, and printing 102d a document 106. By collecting controls into an easily accessible area of the GUI 100, the toolbar 102 enables a user to quickly find and access a particular control whenever the user wants the application to perform a task associated with the selected control.

The toolbar 102 can include button controls (buttons) 102a-102g, 102i that feature pictorial
15 representations of common tasks. When activated by a user (e.g., clicked on), a button 102a-102g, 102i responds by causing a predetermined application function to occur. For example, button 102c includes a picture of a diskette. When a user clicks on the picture of a diskette 102c or anywhere within a bounding region that defines the button 102c, the word processor saves a document 106.

The toolbar 102 can include controls other than buttons 102a-102e, 102j. For example, as
20 shown, the toolbar 102 includes a list control 102h and a pull-down menu control 102i. Referring also to FIG. 2, when activated by a user, the pull-down menu control 102i presents a list of menu choices 104a-104c.

A control can be responsive to user input (i.e., enabled) or unresponsive (i.e., disabled). A control can be displayed differently if disabled. For example, because the user has not selected any

document text 106, the button 102f corresponding to a "cut" function is displayed in a muted gray-scale, indicating that the "cut" function is presently unavailable. As shown, although displayed differently, a disabled control (e.g., 120f) nevertheless occupies its normal amount of space on the GUI screen 100.

5 The toolbar 102 can remain visible while a user performs other actions such as working on the document 106. Additionally, a user can move the toolbar 102 to different regions of a screen 100. Microsoft Word™ also allows a user to tailor the controls included in a toolbar 102 based on personal preference. For example, a user who does not have a printer can remove the print button 102f from the toolbar 102.

10 The inventors have determined that it would be desirable to provide a customized user interface that includes different controls for users belonging to different groups.

SUMMARY

15 In general, in one aspect, a method of regulating user interface controls includes identifying a grouping from among a plurality of groupings and providing a set of user interface controls corresponding to the identified grouping.

Embodiments may include one or more of the following features.

The set of user interface controls may be displayed as a bank of controls. The controls can
20 include buttons, pull-down menu controls, among other user interface controls. The user interface controls can be provided by controls changing an existing collection of user interface controls (e.g., adding or removing user interface controls in a default set of controls).

The groupings may be based on user maturity. For example, different groupings may be for children and/or teenagers. The groupings may also be used to identify access levels to network
25 service provider services such as e-mail, chat rooms, and internet browsing.

Identifying a grouping may include receiving user information and based on the received information, determining the grouping. Such user information can be received via a network connection. The information may include a user identifier. The user identifier may be associated

with a grouping by storing the associated grouping in a database. The grouping can be selected from a list or by identifying user characteristics such as a user's age.

In general, in another aspect, a method of producing a toolbar having user interface controls includes associating a grouping corresponding to a maturity level with a user identifier by receiving
5 a selection of a grouping from a plurality of groupings, receiving a user identifier over a network connection, determining the grouping associated with the user identifier, and using the determined grouping to produce a toolbar having user interface controls. The user interface controls included in the toolbar are determined based on the grouping associated with the user identifier.

In general, in another aspect, a computer program, residing on a computer-readable medium,
10 includes instructions for causing a computer to identify a grouping from among a plurality of groupings and provide a set of user interface controls corresponding to the identified grouping.

Advantages can include one or more of the following. By customizing the controls made available by a toolbar based on a user's group, different users can enjoy the benefits of a toolbar without the clutter of permanently disabled controls or controls not frequently accessed. When the
15 groups correspond to different levels of maturity, an application can provide youngsters with a toolbar that limits access to certain functions, for example, by omitting buttons relating to forbidden functions, without calling these limitations to a child's attention. Additionally, a simplified toolbar -- for example, a toolbar that includes buttons different than those available on a full-access toolbar -- can direct a child's attention to age-appropriate features that a child likely would enjoy.

20 When a network service provider furnishes group specific toolbars, adults can place a child in front of a networked computer without worrying that the child will stumble onto material intended for mature audiences. At the same time, the child is not frustrated or confused by interacting with a toolbar featuring a number of disabled controls.

The details of one or more embodiments of the invention are set forth in the accompanying
25 drawings and the description below. Other features, objects, and advantages of the invention will be apparent from the description and drawings, and from the claims.

DESCRIPTION OF DRAWINGS

FIGS. 1-2 are screenshots of a graphical user interface (GUI).

FIG. 3 is a flowchart for producing a bank of controls based on an identified access level.

5 FIGS. 4A-4B are screenshots of a GUI that can define an access level for a user.

FIGS. 5A-5B are screenshots of toolbars that have different controls based on the different access-levels of different users.

FIG. 6 is a diagram of a system for producing a bank of controls based on an identified access level.

10 FIG. 7 is a diagram of a computer platform.

Like reference numbers and designations in the various drawings indicate like elements.

DETAILED DESCRIPTION

15 Referring to FIG. 3, producing a bank of user interface controls for a graphical user interface (GUI) includes identifying a user's grouping from a set of different groupings (110) and including controls in the bank of controls based on the identified grouping (112). Identifying a grouping can be achieved based on any combination of a wide variety of factors. For example, a grouping can be determined based on information describing user characteristics (e.g., age) or by using environmental
20 information (e.g., when an application is launched).

This technique of producing a bank of user interface controls provides a user with a concentrated collection of controls tailored to a user's grouping. Thus, users belonging to a group having restricted-access do not experience the problem of toolbar clutter that results from permanently disabled controls reserved for more privileged users. Additionally, functions that a
25 certain class of user (e.g., kid, elderly, mentally challenged) are likely to use more frequently can be presented more conspicuously (e.g., as a toolbar button instead of as a menu choice).

The technique described above has a wide variety of potential applications. For example, network services such as e-mail and Internet access offer adults a wealth of information and communication options. These services, however, can expose teenagers and children to subject

matter aimed at more mature audiences. Some inappropriate material is actively sought by young users (e.g., via the Internet) while other material is inappropriately sent to young users (e.g., in chat rooms). Accordingly, one implementation employs maturity-based groupings to customize different toolbars for network service users of different ages.

5 Referring to FIG. 4A, a network service provider GUI 114 can include one or more toolbars 118. Tailoring a toolbar 118 to include a specific set of controls for users of different ages can help protect teenagers and younger children from inappropriate material and simplify use by eliminating otherwise disabled functions from representation on a GUI screen 114. This tailoring also can steer younger users toward areas of potential interest.

10 In one implementation a user's grouping is defined by a "master" user such as an adult having an account with a network service provider. As shown, an adult can create an account for a child by selecting a screen name (i.e., a user identifier) 116. Referring to FIG. 4B, the adult then can select a grouping (e.g., 18+ 120a, mature teen 120b, young teen 120c, or kids 120d) from a list of groupings to associate the selected grouping with the user identifier. Different groupings also
15 grant different levels of access to the Internet (e.g., browsing, newsgroups, FTP (file transfer protocol) downloads), e-mail, chat sessions, and other network services (e.g., account management). Network service software on a client or a host can use a selected grouping (e.g., as defined by a master user) to provide a toolbar tailored to services available to the members of the selected grouping. Selecting a grouping from a list of groupings enables an adult to quickly set up accounts
20 for different youngsters that both provide appropriate limitations on access and provide a customized user interface. The groupings shown are merely illustrative. In another implementation, the network service software includes only two groupings: "Internet access" and "no Internet access."

Sub C4
Referring to FIGS. 5A-5D, a toolbar 118 produced for a user identified as having an "18+" grouping includes controls different from a toolbar 124 produced for a user identified as belonging
25 to a "kids" group. As shown, both toolbars 118, 124 share a number of common controls such as controls for handling e-mail 118a-118c, 124a-124c. Additionally, both toolbars 118, 124 share general characteristics. For example, buttons 118a, 118b, 118k-118m and pull-down menus 118c, 118e-118j both include pictures (e.g., a printer) and text (e.g., "Print") describing the function(s)

accessible with a control. A user can reduce the amount of screen space a toolbar 118, 124 occupies by configuring the toolbar 118, 124 to only display the text description (not shown).

As shown in FIG. 5A, adult toolbar 118 includes a pull-down menu control 118i labeled "Channels" that lists menu choices 122 corresponding to different categories of information that a user can access. Some of the information included in these categories may be inappropriate for young children (e.g., magazine subscriptions that can be ordered using a "bill me later" option). As shown, the "Channels" pull-down menu 122 features a "Kids Only" menu choice 123 near the end of the listed choices 122.

The kids toolbar 124 does not include a number of controls 118j-118m included in the adult toolbar 118 (e.g., controls for accessing stock quote information and for making purchases). Additionally, the kids toolbar 124 does not include the "Channels" menu control 118i included in the adult toolbar 118. The kids toolbar 124 instead includes a "Kids Only" button 124i that presents a "Kids Only" window 126 when activated. Providing access to the "Kids Only" window 126 as a prominent button 124i in the kids toolbar 124, instead of being buried in a list of choices provided by a pull-down menu control 118i, increases the likelihood a young child will navigate to the window 126.

Referring to FIG. 5B, the adult toolbar 118 also includes a "Favorites" pull-down menu control 118g that contains references to content frequently accessed by an adult. Many of the listed entries, for example, merchandise available for purchase on-line or bookmarked Internet sites, may be inappropriate for children. The kid's toolbar 124 does not include the "Favorites" pull-down menu control 118g, but instead offers a "Shortcuts" pull-down menu control 124g that lists choices that direct a child to areas of special interest to kids (e.g., school project ideas).

Referring to FIG. 6, in one implementation, a host 144 uses a table 146 to store the grouping assigned to a user identifier (ID). It should be understood that the host 144 may not be a single computer, but a collection of networked computers. A client, such as client 140a, executing client software 141 (e.g., America Online 4.0) initializes a network session by sending a message including a user identifier 142 to the host 144. The message may also include other information such as the client 140a platform (e.g., a PC or Macintosh computer). Software instructions 146 executing on the host 144 use the table 154 to determine the grouping corresponding to the received user ID 142

09224411-123098
(150) and identify an associated set of toolbar controls based on the determined access level (152). The host 144 can transmit the toolbar information to the client 140a, which will use the information to display a toolbar having the designated set of toolbar controls.

The host software 146 can prepare toolbar information in a number of ways. For example, the software 146 may begin with a default set of controls (e.g., the controls included in the adult toolbar) and modify the controls included in the toolbar transmitted to the client 140a by eliminating and/or adding controls to the default set. The default set of controls can reside on either the client 140a or host 144.

The software 146 can also modify a control in the default set of controls to produce a different control. For example, the software 146 can produce a different pull-down menu control by removing or adding menu choices from an existing pull-down menu control. Additionally, a new button can be produced by modifying an existing button to have a different picture, descriptive text, and/or preprogrammed function.

The system shown in FIG. 6 is merely illustrative. A wide number of different systems can also produce a toolbar customized for different groupings. For example, user information (e.g., user ID and grouping) can be stored on the client 140a instead of the host 144. This configuration, while potentially faster than the system shown in FIG. 6, may run a risk that a clever youngster may figure out how to alter user information stored at the client and thereby obtain access to network services that may be inappropriate. In contrast, storing toolbar customization information at the host helps prevent against the unauthorized viewing of or access to the customization information. Other implementations, distribute system functions between the host 144 and clients 140a-140n differently. Further, in some implementations, the entire system resides on a single computer instead of a host 144 and client 140a.

Referring to FIG. 7, a computer platform 160 suitable for executing instructions for producing a bank of controls based on an identified access level 176 includes a display 162, a keyboard 164, a pointing device 166 such as a mouse, and a digital computer 168. The digital computer 168 includes memory 172, a processor 174, a mass storage device 170a, and other customary components such as a memory bus and peripheral bus (not shown). The platform 160 may further include a network connection 180.

0924214 123093

Mass storage device 170a can store the instructions 176 for producing a bank of controls and instructions for an operating system 178 (e.g., Microsoft Windows 98™). The instructions 176 may be transferred to memory 172 and processor 174 in the course of operation. The instructions cause the display 162 to display images of a graphical user interface. The instructions 176 can be stored
5 on a variety of mass storage devices such as a floppy disk 170b, CD-ROM 170c, or PROM (not shown).

The techniques, methods and systems described here may find applicability in any computing, processing or network environment in which a user interface provides users with access to content or functionality. Various implementations of these systems and techniques may be
10 realized in digital electronic circuitry, or in computer hardware, firmware, software, or in combinations thereof.

A system or other apparatus that uses one or more of the techniques and methods described here may be implemented as a computer-readable storage medium, configured with a computer program, where the storage medium so configured causes a computer system to operate on input
15 and/or generate output in a specific and predefined manner. Such a computer system may include one or more programmable processors that receive data and instructions from, and transmit data and instructions to, a data storage system, and suitable input and output devices.

Each computer program may be implemented in a high-level procedural or object-oriented programming language, or in assembly or machine language if desired; and in any case, the language
20 may be a compiled or interpreted language. Suitable processors include, by way of example, both general and special purpose microprocessors. Generally, a processor will receive instructions and data from a read-only memory and/or a random access memory.

Storage devices suitable for tangibly embodying computer program instructions and data include all forms of non-volatile memory, including semiconductor memory devices, such as
25 EPROM, EEPROM, and flash memory devices; magnetic disks such as internal hard disks and removable disks; magneto-optical disks; and CD-ROM disks.

Any of the foregoing may be supplemented by, or implemented in, specially-designed ASICs (application- specific integrated circuits).

A number of embodiments of the present invention have been described. Nevertheless, it will be understood that various modifications may be made without departing from the spirit and scope of the invention. Accordingly, other embodiments are within the scope of the following claims.

0324241-123098